BY ORDER OF THE
SECRETARY OF THE AIR FORCE

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Aerospace Medicine

BIOENVIRONMENTAL ENGINEERING EQUIPMENT STANDARDS AND MODERNIZATION

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This Manual implements requirements of Air Force Policy Document (AFPD) 48-1, *Aerospace Medicine Enterprise*. This Manual applies to all Air Force (AF) base-level Bioenvironmental Engineering (BE) personnel (active and air reserve components) in both home station and deployed settings. This guidance was created to establish a methodology to provide equipment standards to BE flights/elements AF-wide as well as a clear path to equipment modernization. It prescribes equipment standards and modernization at all base-level locations and has application to all echelons (Headquarters, Major Command (MAJCOM), Numbered AF, and Wing/Base). Where practical, the United States Air Force School of Aerospace Medicine (USAFSAM) Force Development Division will follow guidance in this manual to obtain teaching equipment. The processes contained in this Manual do not apply to unique, one-of-a-kind AF units with uniquely defined mission-sets such as the Air Force Radiation Assessment Team (AFRAT). This Manual outlines the goals of the program along with the responsibilities at each echelon. See Air Force Instruction (AFI) 41-209, *Medical Logistics Support*, for instructions on establishing and executing a Medical Equipment Management program and AFI 41-201, *Managing Clinical Engineering Programs*, for instructions on equipment management. The guidance provided in this document does not apply to any equipment programs under the Joint Capabilities Integration and Development System (JCIDS) outlined under Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01H, *Joint Capabilities Integration and Development System*. This Manual may be supplemented at any level, but all supplements must be routed to the Air Force Medical Support Agency, BE Branch (AFMSA/SG3PB), for coordination prior to certification and approval. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command including the appropriate MAJCOM Bioenvironmental Engineer (BEE). Ensure that

all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS).

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include changing the name of the working group and shifting the responsibility to maintain and update the BE standard equipment list (SEL) to the BE Equipment Working Group (EWG).

Chapter 1

PROGRAM OVERVIEW

1.1. Purpose. This Manual establishes a process to provide equipment standards and equipment modernization for the BE career field. Establishing common BE equipment standards across the AF will minimize logistics support and training requirements. This process will provide a logical path to improved equipment management and allow the Air Force to maximize the execution of program funds.

1.2. Objectives.

1.2.1. Consistent delivery of a common set of mission capabilities across all BE flights/elements in both garrison and deployed environments.

1.2.2. Establishment of a common process that will ensure all equipment actions impacting the BE career field are coordinated and approved by the Associate Chief, Bioenvironmental Engineering (AF/SG3PB).

1.2.3. Capitalize on the Unit Type Code (UTC) and Allowance Standard (AS)-driven standards where available.

1.2.4. Reduce training required when Airmen change stations and deploy.

1.2.5. Reduce the approval and processing time as well as costs associated with the purchase of new equipment.

1.3. Components.

1.3.1. Equipment Standards. Establishment of common equipment standards allows trained BE professionals to execute capabilities through a common set of equipment without the additional burden of training on "local" equipment sets. This also supports the BE strategic objective of "garrison = deployed" by allowing BE personnel to deliver a common set of mission capabilities worldwide. This Manual does not change the UTC or AS management processes, but incorporates them into a common process to ensure all equipment actions impacting the BE career field are coordinated and approved by AF/SG3PB. UTC and AS equipment form a baseline or foundation for equipment standards.

1.3.2. Modernization. This Manual will establish a modernization process for equipment upgrade/replacement efforts when existing equipment is no longer capable of supporting BE capabilities. Specific considerations for upgrade/replacement can be found in AFI 41-201. The modernization process must also consider the entire Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) spectrum. It also applies to equipment that is being replaced due to exceeding its recognized service life (life-cycle).

1.4. Scope. BE flights, elements, and program offices that work with Defense Health Program (DHP) funded equipment and 886H/deployable UTC allowance standard equipment will follow the requirements of this Manual and SEL when purchasing, upgrading, replacing or increasing capabilities of BE equipment.

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. Associate Chief, Bioenvironmental Engineering (AF/SG3PB).

2.1.1. Establish the BE EWG. Designate a representative from ACC/SGPB to serve as the BE EWG Chair. Minimum membership for the BE EWG will include representatives from USAFSAM/OE, ACC/SGX, the Manpower and Equipment Force Packaging (MEFPAK) Responsible Agencies (MRA) and relevant base-level pilot units. Designate members from other organizations as appropriate.

2.1.2. Approve/Disapprove SEL recommendations from the BE EWG and Bioenvironmental Engineering Corporate Board (BCB).

2.2. AFMOA/SGAL. Establish methodology for all equipment purchases. Reference AFI 41-209 for additional information.

2.3. MAJCOM/SGX (limited to those with MEFPAK responsibilities for BE UTCs or Allowance Standard Packages). Participate as a member of the BE EWG and advocate for respective MAJCOM needs.

2.4. MAJCOM/SGPB.

2.4.1. Use the process identified in this Manual in Chapter 3 as a means of equipping flights/elements.

2.4.2. Conduct data calls as requested by the BE EWG.

2.4.3. Review and approve or reject new equipment purchase nominations (items not on the SEL) from subordinate units.

2.4.4. Forward approved equipment purchase nominations to the BE EWG for AF-wide consideration.

2.5. BCB. Review and recommend AF/SG3PB approval/disapproval of all BE EWG equipment purchase recommendations.

2.6. USAF School of Aerospace Medicine, Occupational and Environmental Health Department (USAFSAM/OE).

2.6.1. Designate an appropriate individual/office to participate as a member of the BE EWG. (T-2)

2.6.2. Conduct technical evaluations of recommended equipment upon request.

2.6.3. Monitor the commercial off the shelf (COTS) market for emerging candidate equipment items.

2.6.4. Conduct new equipment evaluation and provide periodic updates to the BE EWG Chair as equipment becomes obsolete or new technologies are available.

2.6.5. Develop training for all 43EX and 4B0X1 Airmen on standard equipment and integrate new equipment into relevant courses and the Readiness Skills Verification Program (RSVP) tools and materials as appropriate.

2.6.6. Through the Environmental Safety and Occupational Health (ESOH) Service Center field questions regarding equipment capabilities.

2.6.7. Maintain equipment, not on the SEL, needed for unique missions/assessments which can be temporarily loaned to BE flights/elements or used for consults.

2.7. BE EWG.

2.7.1. BE EWG Chair.

2.7.1.1. Hold meetings at least annually but as frequently as needed.

2.7.1.2. Lead the BE EWG in review of the SEL at least annually.

2.7.1.2.1. Consider the entire DOTMLPF spectrum to ensure that the materiel solution being presented is the best option for providing/improving the capability.

2.7.1.2.2. Refer non-materiel solutions to the appropriate agency/organization for consideration.

2.7.1.3. Develop and maintain the SEL. The SEL is a dynamic document and as such is not included in this Manual but will be published on the BE SharePoint site along with equipment details. As directed by AF/SG3PB, coordinate all changes to the SEL with AFMOA/SGAL as they occur.

2.7.1.4. Nominate equipment items/packages to the BCB for review and forwarding to AF/SG3PB to be considered for central funding/procurement.

2.7.1.5. Ensure all documentation for SEL nominations is properly stored in an electronic historical file for future reference.

2.7.2. BE EWG Members.

2.7.2.1. Perform periodic reviews of exceptions to the SEL.

2.7.2.2. Participate in periodic reviews of the SEL and recommend to the BE EWG Chair approval/disapproval of equipment addition, replacement, or removal from the SEL.

2.7.2.3. Identify, when necessary, a unit to provide pilot unit-type support for utility evaluations (see paragraphs 2.8.2. and 3.3.3.3).

2.7.2.4. Identify funding/procurement sources for individual pieces of equipment to be evaluated.

2.7.2.5. Ensure nominations do not conflict with JCIDS equipment efforts under the Joint Program Office (JPO).

2.8. Base Level UTC or AS Pilot Units.

2.8.1. Serve on the BE EWG.

2.8.2. As directed, conduct utility evaluations to ensure new items meet user and mission requirements (see **paragraph 3.3.4.4**).

2.9. BE Flight/Element.

2.9.1. Request purchase of non-UTC/AS equipment only from the approved SEL.

2.9.2. Identify capability gaps that can or possibly can be filled by a materiel solution and/or unique equipment needs not included on the SEL. Present this information via the request template at **Attachment 2** to the MAJCOM/SGPB for consideration.

2.9.3. Ensure the request and associated research are routed through locally established base-level routing for review prior to forwarding the request to the MAJCOM/SGPB. Coordination stops to consider are Medical Logistics, BMET (Biomedical Equipment Repair), and Emergency Management (if response equipment). At AFRC installations, the fulltime BE will coordinate equipment requests and the associated research with their active duty (host) Medical Logistics and BMET Flights.

2.9.4. Turn in unneeded equipment to the local Medical Logistics Flight, or local equivalent.

2.9.5. Ensure equipment turned-in for disposal is deleted from inventory records and other databases.

2.9.6. Contact the ESOH Service Center for equipment/technical/operations-related questions.

2.10. Medical Logistics Flight (or local equivalent).

2.10.1. Submit items for BE Flights/Elements, including AFRC BE Flights/Elements, through an AFMOA/SGAL approved system (i.e. TIGERS). Ensure BE includes SEL documentation and AF/SG3PB approval with item request prior to submission for funding consideration.

2.10.2. Properly dispose of unneeded equipment items or items reaching end of service life IAW AFI 41-209.

2.10.3. For turn in of all items containing radioactive materials, coordinate with the installation radiation safety officer (IRSO), the AF Radioisotope Committee (RIC), if permitted, and/or the AF Radiation Recycling and Disposal (AFRRAD) office, 88 ABW/CEIEC.

Chapter 3

PROCEDURES

3.1. Guidance. BE Flights/Elements will request equipment on the SEL. Flights/Elements can nominate equipment for replacement due to age, technology advancement, or mission change. Flights/Elements that wish to nominate equipment for consideration shall use the process described in this Manual. Migration to a common set of equipment standards is expected to occur mainly through attrition. Although the goal is for all BE Flights/Elements to have the same equipment, there is no specified acquisition authority or funding stream identified for a wholesale replacement of operational in-garrison equipment. Flights/Elements will continue to use current serviceable equipment until replacement is required. Over time, the BE enterprise will move to a single set of common equipment standards.

3.2. SEL. The SEL identifies equipment designed to enable flights/elements to meet a capability. The SEL is a list of BE equipment common to UTC and 886H allowance standards and the in-garrison DHP equipment inventory. The list is approved for the request of equipment to meet BE mission requirements.

3.2.1. The SEL will include the following data elements: national stock number (NSN) (if available), manufacturer and model/part number, device code and level of applicability (AF-wide, UTC, or Allowance Standard), estimated cost, salient characteristics, and contract number (if available).

3.2.2. SEL data will be used to populate appropriate data fields in DMLSS, TIGERS and/or AF Forms 601, *Equipment Action Request*, for equipment ordering.

3.2.3. BE Flights/Elements are authorized to locally request consumables, parts, supplies, software, and/or accessories that directly support the equipment items on the SEL.

3.2.4. BE EWG will include equipment identified in support of a UTC or the Home Station Medical Response (HSMR) 886H AS on the SEL.

3.2.5. The SEL will be maintained on the BE SharePoint site (**https://cs3.eis.af.mil/sites/OO-SG-AF-06/default.aspx**).

3.3. Procedure for Adding New Items to the SEL. The procedure for adding new equipment items to the SEL is outlined below. Refer to the equipment nomination process diagram at Attachment 4.

3.3.1. Nomination. BE Flight/Element Commanders will nominate new equipment items to their MAJCOM/SGPB. The MAJCOM/SGPB will utilize internal processes to determine if the nomination is a reasonable proposal prior to approving and forwarding the nomination to the BE EWG. Nominations will be made on the equipment purchase nomination template (**Attachment 2**). Nominations originating above base-level should follow the same path to ensure sufficient level of review is accomplished.

3.3.1.1. Literature Review. A literature review will be completed by the individual nominating the equipment item prior to submission to the MAJCOM/SGPB for consideration. This step includes conducting online research, as well as contacting the manufacturer directly to obtain the technical specifications, capabilities and limitations of

the item. The literature review will be included as an attachment to the nomination template which is submitted to the MAJCOM/SGPB.

3.3.1.2. Rationale. Nominated equipment must be accompanied by a strong supporting rationale as to why the existing equipment cannot meet requirements or how the proposed new equipment might substantially increase BE operational capabilities. The rationale must also describe how the proposed item will fill a specified capability gap.

3.3.2. Submittal. If the MAJCOM/SGPB agrees with the nomination and confirms that equipment on the current SEL cannot meet the stated need, he/she will approve the nomination and forward it to the BE EWG.

3.3.3. Evaluation. BE EWG members will conduct needed research to arrive at an informed opinion of the nominated item. An operational review of new equipment must accompany items being evaluated to replace existing equipment. Testing/evaluation could be the responsibility of several different offices depending on the level required. It is the responsibility of the BE EWG to determine the level of testing/evaluation required for each nominated item. The results of all evaluations conducted will be made available to relevant parties at all echelons. During the evaluation process the BE EWG may consider the initial literature review completed by the individual prior to nomination, MAJCOM recommendations, a technical evaluation by USAFSAM/OE, a utility evaluation by a field unit, an Operational Test and Evaluation (OT&E) or all of the above.

3.3.3.1. Market Research. Market research can be conducted at multiple levels of consideration. The research will provide market data which could include but is not limited to: analysis of available technologies, COTS/Government off-the-shelf (GOTS) equipment available, manufacturer business model analysis, and cost/benefit analysis.

3.3.3.2. Technical Evaluation. Technical evaluations involve analysis of an equipment item's capabilities, limitations and its ability to provide a high level of confidence in the data provided. This type of evaluation should also determine the equipment's salient characteristics if not yet determined. This type of evaluation will be conducted by USAFSAM/OE.

3.3.3.3. Utility Evaluation. A utility evaluation of an equipment item determines its ability to fill the stated capability gap, to include a determination of its potential effectiveness and suitability in performing the mission. It is a characterization of the equipment item based on its ability to meet mission Tactics, Techniques and Procedure (TTP) requirements and human performance factors in the planned or expected operational environment. This type of evaluation is normally conducted by the Pilot unit for UTC items. For items not associated with a UTC, a volunteer unit will be solicited to perform this testing.

3.3.3.4. OT&E. An OT&E is conducted in as realistic an operational environment as possible to estimate the prospective item's operational effectiveness, suitability, and operational capabilities. In addition, OT&E provides information on organization, personnel requirements, doctrine, and tactics. Traditionally this level of testing is accomplished through a testing agency such as: Air Force Medical Evaluation Support Activity (AFMESA), Air Force Operational Testing Center (AFOTEC), or similar organization.

3.3.4. Approval/Rejection Process. The majority of the BE EWG should be in agreement with a decision prior to making a recommendation to the BCB. Once the BE EWG has concluded its review, the items recommended for inclusion on the SEL will be presented to the BCB. This presentation can take place within the context of the next scheduled BCB meeting, or through other appropriate venues as necessary. The BCB will review the BE EWG recommendation(s) and pass an "approve" or "reject" recommendation to AF/SG3PB for final decision. Two possible recommendations to AF/SG3PB are expected:

3.3.4.1. The item is deemed inappropriate to meet the stated need (i.e., rejected). Justification for rejection should be provided upon request.

3.3.4.2. The item is recommended for approval as a replacement or an addition to the SEL.

3.3.5. Equipment Removal Procedures. There are numerous reasons an equipment item may be nominated for removal from the SEL. Such circumstances could include but are not limited to: age of the equipment, cost of maintenance, technology advancement, replacement, no longer supported by the manufacturer or no longer needed to support BE capability execution. Other considerations are outlined in AFI 41-201. Removal of equipment from the SEL will follow the same basic procedures outlined in paragraph 3.3, however all steps of the process may not be deemed necessary. The BE EWG will determine which steps can be omitted in the process.

3.3.6. Documentation. Once an item is approved or disapproved for the SEL, the BE EWG will save all documentation presented during the equipment nomination process in an electronic historical file for future reference. Documentation should be maintained for a piece of equipment for not less than three years after it is denied for inclusion on or removed from the SEL.

THOMAS W. TRAVIS, Lieutenant General,
USAF, MC, CFS
Surgeon General

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 48-1, *Aerospace Medicine Enterprise*, 23 Aug 2011

AFI 41-209, *Medical Logistics Support*, 13 Aug 2013

AFI 41-201, *Managing Clinical Engineering Programs*, 25 Mar 2003

CJCSI 3170.01H, *Joint Capabilities Integration and Development System (JCIDS)*, 10 Jan 2012

AFMAN 33-363, *Management of Records*, 01 Mar 2008

AFI 33-360, *Publications and Forms Management*, 25 Sep 2013

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*, 22 Sep 2009

AF Form 601, *Equipment Action Request*, 01 Jun 1991

Abbreviations and Acronyms

ACC—Air Combat Command

AF—Air Force

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFMESA—Air Force Medical Evaluation Support Activity

AFMOA—Air Force Medical Operations Agency

AFMSA—Air Force Medical Support Agency

AFOTEC—Air Force Operational Testing Center

AFRAT—Air Force Radiation Assessment Team

AFRC—Air Force Reserve Command

AFRIMS—Air Force Records Information Management System

AFRRAD—Radiation Recycling and Disposal

AS—Allowance Standard

BCB—Bioenvironmental Engineering Corporate Board

BE—Bioenvironmental Engineering

BEE—Bioenvironmental Engineer

CJCSI—Chairman, Joint Chief of Staff Instruction

COTS—Commercial Off-The-Shelf

DHP—Defense Health Program

DMLSS—Defense Medical Logistics Standard Support

DOTMLPF—Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities

EWG—Equipment Working Group

ESOH—Environmental Safety and Occupational Health

GOTS—Government Off-The-Shelf

HSMR—Home Station Medical Response

IAW—In accordance with

JCIDS—Joint Capabilities Integration and Development System

JPO—Joint Program Office

MAJCOM—Major Command

MEFPAK—Manpower and Equipment Force Packaging

MRA—MEFPAK Responsible Agency

NSN—National Stock Number

OPR—Office of Primary Responsibility

OT&E—Operational Test and Evaluation

RDS—Records Disposition Schedule

RIC—Radioisotope Committee

RSVP—Readiness Skills Verification Program

SEL—Standard Equipment List

TIGERS—The Integrated Global Equipment Request System

TTP—Tactics, Techniques and Procedures

USAFSAM—United States Air Force School of Aerospace Medicine

UTC—Unit Type Code

Terms

Equipment—All items of a durable nature, other than supplies, which are capable of continuing or repetitive utilitarian use by an individual or organization. Such equipment may be classified as: (a) Individual equipment. Items required for the personal use of individuals, (b) Organizational equipment. Items required for the use of an organization or unit, or (c) Special or project equipment. Items not authorized in standard equipment allowance publications but determined as essential in connection with a particular contemplated operation, function, or mission.

Life Cycle—The total phases through which an item passes from the time it is initially developed until the time it is either consumed in use or disposed of as being excess to all known materiel requirements. (JP 4-02)

Manpower and Equipment Force Packaging System (MEFPAK)—A data system designed to support contingency and general war planning with pre-defined and standardized manpower and equipment force packages.

National Stock Number—The 13-digit stock number replacing the 11-digit federal stock number. It consists of the 4-digit federal supply classification code and the 9-digit national item identification number. The national item identification number consists of a 2-digit National Codification Bureau number designating the central cataloging office (whether North Atlantic Treaty Organization or other friendly country) that assigned the number and a 7-digit (xxx-xxxx) nonsignificant number. The number shall be arranged as follows: 9999-00-999-9999. (JP 4-09)

Off—The-Shelf Item—An item that has been developed and produced to military or commercial standards and specifications, is readily available for delivery from an industrial source, and may be procured without change to satisfy a military requirement.

Salient Characteristics—The physical, functional, and/or performance characteristics that a piece of equipment must meet in order to satisfy a stated capability gap.

Unit Type Code (UTC)—A Joint Chiefs of Staff developed and assigned code, consisting of 5 characters the uniquely identify a "type unit." (JP 1-02)

Attachment 2

EQUIPMENT PURCHASE NOMINATION TEMPLATE

Figure A2.1. Equipment Purchase Nomination Template.

(1) Unit Name, POC, Contact Number:			
(2) General Description:			
(3) Manufacturer's Item (model) Name:			
(4) Model Number/Part Number:		(5) National Stock Number (If assigned):	
(6) Manufacturer:		(7) Country of Manufacture:	
(8) First Manufactured (year):		(9) Version History (Is this the first version?):	
(10) Justification (why existing equipment are not able to satisfy need):			
(11) Type of Hazard Addressed: ☐Chemical ☐Biological ☐Radiological ☐Physical ☐Other: _____			
(12) Sampling Media: ☐Air ☐Water ☐Soil ☐Bulk ☐Other: _____			
(13) BE Capability Supported: _____			
(14) Cross-Functionality (currently or potentially): ☐CEX ☐CEO ☐CEF ☐CES ☐SE ☐Other: _____ ☐Army ☐Navy ☐Marines ☐Coast Guard			
Rate each of the following on a scale of 1 – 10 (10 being the best)			
(15) Cost Data		(16) Usability	
(a) Overall ($):		(a) Ease of Use (1-10):	
(b) Consumables (including sensors) ($):		(b) Reasonable Size (1-10):	
(c) Training ($):		(c) Light-Weight (1-10):	
(d) Service/Maintenance ($):		(d) Portable (1-10):	
(e) Lifecycle (sustainment) ($):			
(17) Efficiency			
(a) Reasonable power/battery requirements (1-10):		(d) MOPP 4/Level A friendly (1-10):	
(b) Ruggedness (1-10):		(e) Decon-able (Y/N):	
(c) Intrinsically Safe (Y/N):			
(18) Maintenance/Upkeep			
(a) Frequency of mfg required maintenance:		(b) Frequency of calibration:	
(19) Manufacturer Information Address:			
Phone Number:			
Website:			
24-hr Manufacturer Helpline:	☐Yes ☐No Phone #		
(20) Comment(s):			
(21) Additional Data User feedback from the BE Flight/Element (pros/cons):			
Known mission capability (reliability/failure) rates:			
Training requirement (hours):			
Shelf life for consumables:			
(22) Flight/Element Commander Approval: _____			
(23) MAJCOM/SGPB Approval: _____ Comments: _____ _____			

Instructions

Block (1) Self-explanatory.
Block (2) General description of the equipment item.
Block (3)-(7) Self-explanatory.
Block (8) First year this particular model was manufactured.
Block (9) Self-explanatory.
Block (10) Explain the requirement for this particular equipment item. i.e. improved capability, new technology, replaces old technology, replaces multiple equipment items, cost savings.
Block (11)-(12) Self-explanatory.
Block (13) List the BE capability that this equipment item supports.
Block (14) Is this equipment currently being used or could potentially be used by another organization? Check all that apply.
Block (15a) Basic cost of the equipment.
Block (15b) Cost of any consumables. i.e. batteries, gases, filters, etc. Cost of consumables based upon one 8-hour mission.
Block (15c) Estimated cost of training per person.
Block (15d) Estimated annual cost of service/maintenance to include calibration requirements if applicable.
Block (15e) Estimated life cycle sustainment cost = ((15b X 4)+15d) X 5
Block (16) Rate each area from 1-10 (10 being the best). Each area should be based upon a subjective rating as judged by the individual(s) submitting the nomination. An objective rating process will be established for the equipment item during the evaluation process by USAFSAM/OE.
Block (17a-b) Same as Block 16.
Block (17c) Yes/No.
Block (17d) Same as Block 16.
Block (17e) Yes/No.
Block (18)-(19) Self-explanatory.
Block (20) Include any additional comments such as any hazardous materials or special storage requirements.
Block (21)-(23) Self-explanatory.

Attachment 3

EQUIPMENT PURCHASE NOMINATION TEMPLATE EXAMPLE

Figure A3.1. Equipment Purchase Nomination Template Example.

Unit Name, POC, Contact Number:			
General Description: Multigas Meter			
Manufacturer's Item (model) Name: Ppb Rae			
Model Number/Part Number:		National Stock Number (If assigned):	
Manufacturer: Rae Systems		Country of Manufacture: US	
First Manufactured (year): 2009		Version History (Is this the first version?): Version 1	
Justification: (why existing equipment are not able to satisfy need) Support maintenance requirements to sample F-22A air at ppb concentration			
Type of Hazard Addressed: ☒Chemical ☐Biological ☐Radiological ☐Physical ☐Other: _____			
Sampling media: ☒Air ☐Water ☐Soil ☐Bulk ☐Other: _____			
BE Capability Supported: Identify OEH hazards and Analyze OEH hazards			
Cross-Functionality (currently or potentially): ☐CEX ☐CEO ☒CEF ☒CES ☐SE ☐Other: _____ ☒Army ☒Navy ☐Marines ☐Coast Guard			
Rate each of the following on a scale of 1 – 10 (10 being the best)			
Cost Data		Usability	
(a) Overall ($):	$7,195	(a) Ease of Use (1-10):	9
(b) Consumables ($):	$325 (cal gas)	(b) Reasonable Size (1-10):	9
(c) Training ($):	$572 (basic)	(c) Light-Weight (1-10):	9
(d) Service/Maintenance ($):	$623 (replace sensors every 2 years)	(d) Portable (1-10):	9
(e) Lifecycle (sustainment) ($):	$144,225 (5-10 years)		
Efficiency			
(a) Reasonable power/battery requirements (1-10):	7	(d) MOPP 4/Level A friendly (1-10):	8
(b) Ruggedness/Survivability (1-10):	9	(e) Decon-able (Y/N):	Yes
(c) Intrinsically Safe (Y/N):	Yes		
Maintenance/Upkeep			
(a) Frequency of mfg required maintenance:	Not Specified	(b) Frequency of calibration:	7-30 days
Manufacturer Information			
Address:	3775 North First St San Jose, CA 95131		
Phone Number:	1-408-952-8200		
Website:	www.raesystems.com		
24-hr Manufacture Helpline:	☒Yes ☐No Phone # 408-952-8200 Opt 8		
Comment(s):			
Additional Data User feedback from the BE Flights (pros/cons): Pros: easy to attach to self, easy to read, chlorine detection, light weight, easy to calibrate, has data logging capability. Cons: calibration gas limitation, user has to calibrate, and battery has to be charged			
Known mission capability (reliability/failure) rates: Not available from manufacturer at this time; no failure comments from BE			
Training requirement (hours): Basic user: 90 minutes, Advanced user: 8 hours			
Shelf life for consumables: Sensor shelf life: 6 months in sealed container (LEL is 2 years)			
Flight/Element Commander Approval: _____			
MAJCOM/SGPB Approval: _____ Comments: _____			

Attachment 4

EQUIPMENT NOMINATION PROCESS

Figure A4.1. Equipment Nomination Process.